

REMARKS

Applicant has carefully considered the Final Office Action dated February 8, 2007 and the references cited therein. Applicant provides this Amendment in a sincere effort to place the Application in condition for allowance. Accordingly, entrance of this Amendment and allowance of the Application is respectfully requested.

In the Office Action, the Examiner has rejected Claims 6 and 7 under 35 U.S.C. §112, second paragraph. With regard to Claim 6, the term “like” was deemed indefinite. Accordingly, Applicant has deleted the term “pad-like” from Claim 6.

Claim 7 has been rejected for including terms which have been deemed to be vague and indefinite. In order to permit the Application to proceed, Applicant has cancelled Claim 7.

Applicant has amended Claim 1 to correct a grammatical informality and replace “consisting” with “comprising”.

Claims 5-7 have been rejected under 35 U.S.C. §103(a) as being unpatentable over references WO 0197583, GB 2193847 or GB 2266410 in combination with Huske et al. reference. This rejection was made in the prior Office Action. The Office Action contends that the WO 0197583, GB 2193847 and GB 2266410 references teach using a substrate that can be plated with a metal layer. However, as the Examiner notes, these references do not teach using a material that is only platable after being activated by a laser. The Examiner relies on Huske et al. for this teaching. However, Huske et al. does not teach combining laser activated material with material that is platable without laser activation. The Examiner contends it would be obvious to have modified the methods of WO 0197583, GB 2193847 or GB 2266410 to incorporate a laser activation pretreatment prior to metallization.

The Office Action addresses Applicant’s position set forth in the Amendment dated December 27, 2006. Applicant argued that the prior art failed to teach or suggest a conductor carrying means including both a material that can be metallized and a material that can be metallized only with laser activation to form a conductor carrying means. The Examiner agrees in part, but contends that the collective teachings in the prior art would teach one

skilled in the art that the use of platable material and platable material with laser pretreatment are known in the art and would have reasonable expectation of achieving similar success regardless which material or both would be utilized. The Examiner has invited the Applicant to supply a showing of unexpected results garnered from using both plastics verses one or the other, and has indicated that upon such a showing the Examiner would reconsider his position.

Applicant gratefully acknowledges the Examiner's invitation and respectfully submits that unexpected results are obtained by using both types of materials in the formation of a conductor carrying means verses using one or the other. Applicant has provided evidence of unexpected results in the form of a Rule 132 Declaration by the inventor, Stephan Schauz.

As set forth in Mr. Schauz's Declaration, the method of producing an injection-molded conductor carrying means using material which is metallizable only after being activated by a laser beam pretreatment is typically used for forming fine conductive patterns with very narrow conductive paths. Since laser beams are very thin, very narrow tracks on the material can be activated which after subsequent metallization will form narrow metallic conductor paths. This procedure is typically used for producing electronic layout of circuitry where it is desired to electrically connect many electronic components on a very small area. For example, this process is typically used for electrically connecting a microchip on a conductor carrier means. In order to connect the microchip, it is required that the metallized connecting pattern for the microchip be very narrow with the single pad being placed very close in side-by-side arrangement because the contact wires for the microchip are also in very close relationship to each other. Schauz Decl. ¶¶4 and 5.

A connector carrier means in addition to micro electrical components may also include large components such as connecting sleeves, spring contacting elements, plugs or other connection elements which communicate with a macro environment. Connecting these macro components to the fine conductors of the micro electrical components is often problematic. Typically, such connecting is done by soldering wires of the connection elements to the conductors. But this is very difficult because of the very thin metallized structure of the conductors on the carrying means. One possible way to achieve this is to use

laser activated material and create larger metallization areas on the conductor carrier means by laser activating large areas of material using back and forth laser movement. However, this process is time consuming and expensive and does not create smooth planner activated areas. Schauz Decl. ¶¶6 and 7.

Using material that is innately metallizable for creating a metallized pattern normally requires a use of masks for covering the areas on which plating is not desired. By using such masks, it is easier to define large uncovered areas which in a subsequent metallization step may have a metal layer deposited. However, such masks are not able to create metallizable tracks in the fine pattern desired for use with small electronic components. Therefore, it is not an alternative to the laser beam activated method. Schauz Decl. ¶8. Accordingly, using a material which is metallizable without activation has the limitation of not being able to make the very fine patterns which are desirable for mounting certain complex electronic components.

The present invention provides unexpected results through use of both types of materials to form a conductor carrying means. By combining both materials, it has been found that by using one single metal deposition step one can create both fine structure conductors for connection with electronic components and coarse structured areas such as relatively large electrical components on one and the same injected molded conductor carrying means. In that fine metallization patterns generated by the laser activation and the metallization pattern defined by uncovered areas of the principally metallizable material are adjoining each other in at least some regions, a continuous metallized layer extending over both kinds of metallization patterns is able to be generated by the single deposition step. Accordingly, the metallized patterns of disparate sizes, such as fine conductors and coarse areas, can be created and joined in one metallization step. Schauz Decl. ¶9. There is no teaching or suggestion in the art with regard to this feature of the claimed invention.

Furthermore, the present invention solves the problems of the prior art. By using both materials, there is no more need for cumbersome separate soldering measures using wiring as set forth above for connecting metallized areas of different sizes. Such disparate components

can be connected by a single metallization step. Time and expense of using a laser to create large activated areas is also avoided. Schauz Decl. ¶ 10.

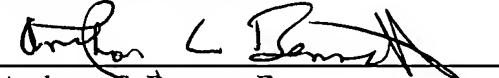
A method of producing a conductor carrying means using a combination of both materials as defined in the present invention has led to favorable results which could not have been expected by one skilled in the art. Schauz Decl. ¶11. The prior art fails to provide any teaching as to the ability to join metallized structures of differing sizes and to join them in one metallization step through the use of both innately metallizable material and that which requires laser pretreatment.

Accordingly, the Applicant respectfully submits that the invention set forth in Claim 5 patentably distinguishes over the references of record.

As a result to the amendments and remarks set forth above, Applicant respectfully requests reconsideration of the pending claims and entry of this Amendment. Allowance of the Application with Claims 5 and 6 is also respectfully solicited.

If the Examiner believes that a telephone interview would be helpful in moving this case towards allowance, he is respectfully invited to contact the Applicant's attorney at the number set forth below.

Respectfully submitted,



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